IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Ralf KRANNICH et al.

Serial No. 10/573,751   Group Art Unit: 2617

Confirmation No. 3824

Filed: March 29, 2006   Examiner: Lebassi, Amanuel

For: ENHANCING CELL RESOLUTION MOBILE POSITIONING ESTIMATES VIA SIGNAL STRENGTH MEASUREMENT REPORTED BY MOBILE STATION (As amended)

PRE-APPEAL BRIEF CONFERENCE REQUEST

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

The Applicants respectfully request review of the rejection mailed March 16, 2010 in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal.

Claims 1-10 and 12 were previously cancelled. Claims 11 and 13-28 are pending. Claims 11 and 13-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,181,944 to Uebayashi et al. in view of U.S. Patent Pub. No. 2004/0152471 to MacDonald et al. A pre-appeal brief panel review of the identified appealable issue is requested.

I.   Rejection under 35 U.S.C. § 103

a.   "receiving reports from the subscriber station at a receive station providing coverage for a radio cell in which the subscriber station is located, each report containing information relating to a signal strength at a location of the subscriber station of at least one receive signal received by the subscriber station and sent by a transmitting station," as recited in independent claim 11

The Examiner alleges at page 4 of the Office Action that Uebayashi discloses such.

i.   Uebayashi

Uebayashi discusses sending signal sequences (PN1, PN2), which are used to determine a phase difference between the phase of the second sequence PN2 and the phase of the first sequence

PN1 in order to calculate a distance between a mobile station 100 and a base station 200 based on the phase difference. The first signal PN1 is generated and sent from the mobile station device 100 to the base station device 200. Then, after the phase of PN1 is detected, a second signal sequence PN2 is generated at the base station device 200 and transmitted to the mobile station device 100. Then the mobile station device 100 compares the phase of the PN1 and the phase of PN2, detects their phase difference, and calculates a distance between the mobile station device 100 and the base station device 200 based on the phase difference.

First, the signal sequences PN1, PN2 do not relate in any manner to *signal strength*. The signal sequences PN1 and PN2 merely measure the distance between the mobile station device 100 and the base station device 200 based on the result of the measurement of the round trip time (using the signal sequences PN1 and PN2). Specifically, the signal sequences PN1 and PN2, which are transmitted from and to the mobile station device 100 from and to the base station device 200, indicate only a distance off the base station device 200 (i.e., a circle about the base station device 200 on which the mobile station device 100 is situated). The signal sequences PN1, PN2 <u>only relate to determining a round trip time from the mobile station 100 to the base station 200 and back to the mobile station 100</u>, but do not suggest constituting information as to a <u>signal strength</u> at a subscriber station <u>of a receive signal</u>.

In particular, the signal strength of the receive signal PN2, which is received by the mobile station device 100, cannot be computed merely based on the <u>distance</u> between the base station device 200 and the mobile station device 100 alone. The signal strength of a signal additionally depends on the topography, i.e., hills, houses, trees, etc. Thus, merely determining the distance between two devices (the mobile station device 100 and the base station device 200) or the run time delay between the two devices is not receiving a report containing information relating to a <u>signal strength</u> at a location of a subscriber station of a receive signal received by the subscriber station. Uebayashi does not suggest that a signal strength of the receive signal PN2, which is received by the subscriber station (mobile station device 100), is provided or that any information relating to such signal strength is determined.

Further, Uebayashi does not suggest receiving reports from the subscriber station at a receive station (i.e., base station 200). The signal sequence PN1 that is received from the mobile station device 100 at the base station 200 is not a <u>report</u> containing <u>information</u> relating to a signal strength of a receive signal received by the mobile station device 100 and sent by a transmitting station. The signal sequence PN1 is first generated by the mobile station device 100 and then transmitted to the base station device 200 completely independently of any receive signal received by the mobile station device 100. While a signal sequence PN2 is received by the mobile station device 100, the signal sequence PN1 is not generated and transmitted from the mobile station device 100 to the base station device 200, where the signal sequence PN1 contains information related to a signal strength of a receive signal <u>received by the mobile station device 100</u>. Additionally, the signal sequence PN1 does not contain any information

related to signal strength and also cannot be construed to contain information relating to a signal strength of a receive signal (for example, signal sequence PN2) received by a subscriber station and sent by a transmitting station, because the signal sequence PN2 (which is the only example within the cited portions of the disclosure of a receive signal received by a subscriber station, i.e., mobile station device 100) is only generated <u>after</u> the signal sequence PN1 is generated and transmitted to the base station device 200. Thus, because the signal sequence PN2 is generated <u>after</u> the signal sequence PN1, it is not possible for the signal sequence PN1 to be construed to contain information relating to a signal strength at a subscriber station (i.e., mobile station 100) of a receive signal received by the subscriber station (i.e., mobile station 100) because such information would necessarily have to have been received <u>prior to</u> the generation of signal sequence PN1.

b. "storing the reports in a memory of the receive station of the radio communication system providing coverage for the radio cell in which the subscriber station is located"

The Examiner alleges in the Office Action that Uebayashi discloses such at col. 6, lines 25-27.

Uebayashi does not store the received signal sequence PN1 at a receive station (e.g., the base station 200) – the signal sequence PN1 is merely received and detected, and then a further signal sequence PN2 is generated at the base station 200 and transmitted after the signal sequence PN1 is received. The signal sequence PN2 is received by the mobile station 100 and the information is immediately processed. Uebayashi does not suggest that the signal sequence is <u>stored</u> at the mobile station 100 (see Fig. 1).

c. "receiving a request for position estimation at the receive station"

The Examiner alleges in the Advisory Action that Uebayashi discloses where a position check request signal is received which is to be used for location estimation therefore receiving a request for position estimation at the receive station. However, Uebayashi does not suggest receiving a request for position estimation <u>at the receive station</u> (e.g., a base station) of the radio communication system. In Uebayashi, two possible position check request modes are discussed. At col. 6, lines 1-6, Uebayashi discusses that the user issues a position check request signal <u>to the mobile station device 100</u> (i.e., via the menu or a key of the mobile device), and at col. 6, lines 6-13, Uebayashi discusses that a user of a fixed network or another mobile station may issue the position check request <u>to the mobile station device</u>. However, the mobile station device 100 is not a <u>receive station</u> providing coverage for a radio cell in which a subscriber station is located. Specifically, a receive station which provides coverage for a radio cell in which a subscriber station is located is <u>a base station</u>. Uebayashi does not suggest that the base station device 200, for example, receives a request for position estimation, but only suggests that the mobile station device 100 receives a position check request signal.

d. "estimating the position at a position determining unit taking into account at least two reports stored prior to the request for position estimation"

Further, Uebayashi does not suggest estimating a position. For any proper localization of a mobile station, one needs three overlapping circles, but Uebayashi does not elaborate on this point. Thus, while the distance of the mobile station device 100 to the base station device 200 may be determined in Uebayashi, Uebayashi does not suggest estimating <u>the position</u> of a subscriber station.

i. MacDonald

The Examiner alleges that MacDonald makes up for the deficiencies in Uebayashi with respect to taking into account at least two reports stored prior to the request for position estimation.

MacDonald discusses receiving reported signal strengths from a mobile station (see paragraph 12, lines 3-6). However, the signal strength values in MacDonald are not received signal strength values <u>reported from a mobile station</u>, as in the present invention. MacDonald discusses maintaining a mobile assisted hand-off (MAHO) list, which contains the signal strengths of the signals that the mobile telephone 120 is receiving over the control channels of nearby cells. However, MacDonald does not suggest that these signal strengths are <u>transmitted</u> from the mobile telephone 120 to a receive station so that the receive station (such as a base station) receives the reports. The mobile telephone 120 does not transmit the information as to the signal strengths to another unit, but merely estimates a location based on the received signal strengths.

Further, as MacDonald only discusses that the mobile station itself receives the signal strengths of signals and estimates a location based on the received signal strengths of the signals, MacDonald is not suggestive of storing at least two reports <u>prior to a request for position estimation</u>, particularly because MacDonald does not suggest <u>requesting</u> position estimation from, for example, a receive station (e.g., a base station). Thus, as MacDonald only discusses analyzing the signal strengths of signals <u>at the same mobile station that has received the signals and *not* at a receive station (e.g., a base station) which has received the signal strength reports *from* a mobile station</u>, then MacDonald cannot be suggestive of estimating a position at a position determining unit taking into account at least two reports <u>stored *prior to*</u> the request for position estimation.

Also, MacDonald does not suggest storing the received signal strength values of the mobile station <u>in a memory *of a receive station (e.g., a base station)*</u>, which has received the signal strength values *from a subscriber station (e.g., a mobile station)*. MacDonald discusses that the mobile station itself received the signal strength values, but not that those values are transmitted to a base station.

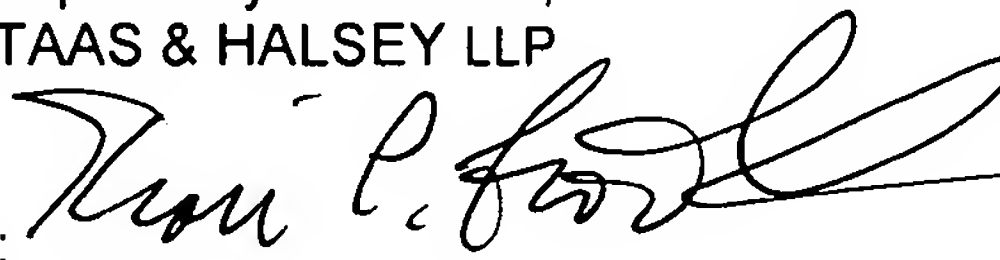### e. Apparent Reason, Changes Principle of Operation, Unsatisfactory for Intended Purpose

"[I]n order to make more accurate position determinations" is not an apparent reason with rational underpinning for modifying Uebayashi, particularly as to receiving reports from a subscriber station <u>at a receive station</u> providing coverage for a radio cell in which the subscriber station is located (e.g., a base station) and storing the reports in a memory of the receive station, where the reports are stored <u>prior to a request for position estimation</u> *at the receive station* (e.g., a base station). Also, as the signal sequences PN1, PN2 of Uebayashi, which the Examiner alleges corresponds to the reports recited in independent claim 11, are only generated <u>after</u> a position check request signal is issued, if Uebayashi were to be modified in light of MacDonald so that the signal sequences PN1, PN2 were to be generated <u>before</u> a request for position estimation is received, then the principle of operation of Uebayashi would be changed, which is not permitted by M.P.E.P. § 2143.01. Further, if Uebayashi were modified so that the signal sequences PN1, PN2 (alleged to correspond with the "reports") were generated <u>prior to</u> the request for position estimation, then Uebayashi would be rendered unsatisfactory for its intended purpose because the signal sequences PN1, PN2 can <u>only be generated *after*</u> the request for position estimation is received. Thus, the signal sequences PN1, PN2 could not be modified to be generated and transmitted <u>prior to</u> the request for position estimation or Uebayashi would not work correctly.

Therefore, independent claim 11 patentably distinguishes over the references relied upon, and independent claim 28 for similar reasons. Dependent claims 13-27 depend on claim 11 and are therefore believed to be allowable for at least the foregoing reasons.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited. Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,
STAAS & HALSEY LLP

Date: _____June 16, 2010_____   By: _____

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